

Notice of Allowability

Application No.

09/927,265

Examiner

Dixomara Vargas

Applicant(s)

BARBARA, THOMAS M.

Art Unit

2859

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 01/20/04.
2. ☒ The allowed claim(s) is/are 1,3,5,7,8,10-12 and 14-19.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☒ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

Diego Gutierrez

Supervisory Patent Examiner

DETAILED ACTION

Allowable Subject Matter

1. Claims 1, 3, 5, 7, 8, 10-12 and 14-19 are allowed.
2. The following is an examiner's statement of reasons for allowance:
3. With respect to claim 1, the claim has been found allowable over the prior art because the prior art fails to teach or fairly suggest an extended Maxwell pair comprising gradient shield coils wherein a, b, d and z_0 satisfy an equation given by

$$\int_0^{k_{\max}} dk k^4 \{ \sin(kd/2) \sin(kz_0/2) / (kd/2) \} S_0(k) K_0'(ka) I_0(k\rho) = 0 \text{ where } S_0(k) = 1 -$$

$\frac{K_1(kb) I_1(ka)}{K_1(ka) I_1(kb)}$, I_1 and K_1 are modified Bessel functions, K_{\max} is a selected upper limit of integration and ρ is a selected value less than a in combination with the remaining limitations of the claim.

4. With respect to claim 11, the claim has been found allowable over the prior art because the prior art fails to teach or fairly suggest a method of designing an extended Maxwell pair comprising the steps of deriving a calculated resultant magnetic field, a linearity-establishing equation for obtaining a linear gradient around the origin wherein said linearity-establishing

equation is given by $\int_0^{k_{\max}} dk k^4 \{ \sin(kd/2) \sin(kz_0/2) / (kd/2) \} S_0(k) K_0'(ka) I_0(k\rho) = 0 \text{ where } S_0(k) = 1 -$

$\frac{K_1(kb) I_1(ka)}{K_1(ka) I_1(kb)}$, I_1 and K_1 are modified Bessel functions, K_{\max} is a selected upper limit of integration and ρ is a selected value less than a in combination with the remaining limitations of the claim.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dixomara Vargas whose telephone number is (571) 272-2252. The examiner can normally be reached on 8:00 am. to 4:30 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Dixomara Vargas
Art Unit 2859
February 25, 2004



Diego Gutierrez
Supervisory Patent Examiner
Technology Center 2800